





charge in cfs				Total Recoverable Aluminum Coefficients		
		Intercept	coefficient			
		Runoff	Low Flow November-March	A72	B	Intercept
M34	-2.771	0.394	-2.28954	0.38718	1.000	496.92654
CC48	1.752	0.130	6.77165	0.10539	1.000	299.49322
A68	-11.131	0.498	-3.62869	0.45153	0.001	2153.80184
				A68		140.21455

Discharge Relationships among the three gages

MONTH	J	F	M	A	M	J	J
Intercept	1	1	1	1	1	1	1
A 72	64	63	77	155	682	1196	624
M34	22	22	28	58	266	468	243
CC48	14	13	15	22	91	158	83
A68	25	25	31	66	329	585	300
Ground water	3	3	3	9	-3	-14	-2

1/(1+BQ) Discharge Representation

A 72	0.0154	0.0156	0.0128	0.0064	0.0015	0.0008	0.0016
M34	0.3572	0.3612	0.3123	0.1767	0.0449	0.0260	0.0489
CC48	0.0689	0.0694	0.0629	0.0435	0.0109	0.0063	0.0119
A68	0.9754	0.9758	0.9698	0.9380	0.7527	0.6311	0.7694

Date variables

sin	0.1552	0.6358	0.9276	0.9887	0.7862	0.3629	-0.1441
cos	0.9879	0.7719	0.3737	-0.1496	-0.6180	-0.9318	-0.9896
sin1	0.3066	0.9815	0.6932	-0.2959	-0.9717	-0.6763	0.2852
cos1	0.9518	0.1916	-0.7207	-0.9552	-0.2361	0.7366	0.9585
Consent	1	1	1	1	1	1	1

A72	Intercept	1	1	1	1	1	1
	BQ	0.0154	0.0156	0.0128	0.0064	0.0015	0.0016
	sin	0.1552	0.6358	0.9276	0.9887	0.7862	-0.1441
	cos	0.9879	0.7719	0.3737	-0.1496	-0.6180	-0.9896
	sin1	0.3066	0.9815	0.6932	-0.2959	-0.9717	-0.6763
	cos1	0.9518	0.1916	-0.7207	-0.9552	-0.2361	0.7366
	Consent						

A72 Concentration 2916 3055 2672 1683 839 580 537

M34	Intercept	1	1	1	1	1	1
	BQ	0.3572	0.3612	0.3123	0.1767	0.0449	0.0260
	sin	0.1552	0.6358	0.9276	0.9887	0.7862	-0.1441
	cos	0.9879	0.7719	0.3737	-0.1496	-0.6180	-0.9896
	sin1	0.3066	0.9815	0.6932	-0.2959	-0.9717	-0.6763
	cos1	0.9518	0.1916	-0.7207	-0.9552	-0.2361	0.7366
	Consent	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

M34 Concentration 4331 4376 3824 2293 806 593 852

CC 48	Intercept	1	1	1	1	1	1	1
	BQ	0.0689	0.0694	0.0629	0.0435	0.0109	0.0063	0.0119
	sin	0.1552	0.6358	0.9276	0.9887	0.7862	0.3629	-0.1441
	cos	0.9879	0.7719	0.3737	-0.1496	-0.6180	-0.9318	-0.9896
	sin1	0.3066	0.9815	0.6932	-0.2959	-0.9717	-0.6763	0.2852
	cos1	0.9518	0.1916	-0.7207	-0.9552	-0.2361	0.7366	0.9585
	Consent	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
CC 48 Concentration		6027	6101	5696	4528	2655	2164	2262
A68	Intercept	1	1	1	1	1	1	1
	BQ	0.9754	0.9758	0.9698	0.9380	0.7527	0.6311	0.7694
	sin	0.1552	0.6358	0.9276	0.9887	0.7862	0.3629	-0.1441
	cos	0.9879	0.7719	0.3737	-0.1496	-0.6180	-0.9318	-0.9896
	sin1	0.3066	0.9815	0.6932	-0.2959	-0.9717	-0.6763	0.2852
	cos1	0.9518	0.1916	-0.7207	-0.9552	-0.2361	0.7366	0.9585
	Consent							
A68 Concentration		166	204	228	232	213	176	136
Concentration		0	0	0	0	0	0	0
Load in pounds per day								
	Sum	988	992	1064	1341	2834	3898	2354
	A72	1008	1039	1111	1409	3090	3745	1810
	% Difference	-0.02	-0.05	-0.04	-0.05	-0.08	0.04	0.30
	RPD	-0.02	-0.05	-0.04	-0.05	-0.09	0.04	0.26

Recoverable Aluminum Coefficients

BQ	sin	cos
44614.59702	285.00575	<u>151.57158</u>
<u>1284.63217</u>		
49268.69456	298.24193	<u>438.56568</u>
11.83749	81.56609	<u>1.12097</u>

A	S	O	N	D
1	1	1	1	1
268	187	142	92	70
103	71	53	33	25
37	26	20	16	14
122	82	60	38	28
6	8	9	4	3

0.0037	0.0053	0.0070	0.0108	0.0141
0.1085	0.1500	0.1904	0.2727	0.3350
0.0265	0.0368	0.0470	0.0572	0.0660
0.8910	0.9242	0.9438	0.9635	0.9728

-0.6271	-0.9360	-0.9878	-0.7716	-0.3573
-0.7789	-0.3521	0.1556	0.6361	0.9340
0.9769	0.6591	-0.3074	-0.9816	-0.6674
0.2135	-0.7521	-0.9516	-0.1908	0.7447
1	1	1	1	1

1	1	1	1	1
0.0037	0.0053	0.0070	0.0108	0.0141
-0.6271	-0.9360	-0.9878	-0.7716	-0.3573
-0.7789	-0.3521	0.1556	0.6361	0.9340
0.9769	0.6591	-0.3074	-0.9816	-0.6674
0.2135	-0.7521	-0.9516	-0.1908	0.7447

738	946	1250	1928	2573
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1	1	1	1	1
0.1085	0.1500	0.1904	0.2727	0.3350
-0.6271	-0.9360	-0.9878	-0.7716	-0.3573
-0.7789	-0.3521	0.1556	0.6361	0.9340
0.9769	0.6591	-0.3074	-0.9816	-0.6674
0.2135	-0.7521	-0.9516	-0.1908	0.7447
1.0000	1.0000	1.0000	1.0000	1.0000
1523	1992	2449	3377	4080

1	1	1	1	1
0.0265	0.0368	0.0470	0.0572	0.0660
-0.6271	-0.9360	-0.9878	-0.7716	-0.3573
-0.7789	-0.3521	0.1556	0.6361	0.9340
0.9769	0.6591	-0.3074	-0.9816	-0.6674
0.2135	-0.7521	-0.9516	-0.1908	0.7447
1.0000	1.0000	1.0000	1.0000	1.0000
2932	3536	4244	5023	5709

1	1	1	1	1
0.8910	0.9242	0.9438	0.9635	0.9728
-0.6271	-0.9360	-0.9878	-0.7716	-0.3573
-0.7789	-0.3521	0.1556	0.6361	0.9340
0.9769	0.6591	-0.3074	-0.9816	-0.6674
0.2135	-0.7521	-0.9516	-0.1908	0.7447
99	74	71	89	124

0	0	0	0	0
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1492	1294	1190	1073	1002
1068	955	959	958	973
0.40	0.35	0.24	0.12	0.03
0.33	0.30	0.22	0.11	0.03

A72			Prediction Equation Coefficients	
Chronic TVS at A72			Hardness	
	a2	b2		
Cd	-3.49	0.7852	B	0.006
Cu	-1.485	0.8545	Intercept	82.304
Mn	4.785	0.5434	BQ	200.676
Zn	0.7614	0.8473	sin	16.936
			cos	48.860
			sin1	15.385
			cos1	-5.633

Month	J	F	M	A	M	J	J
Q	64	63	77	155	682	1196	624
Hardness	277	290	268	196	91	53	72
Al ch	87	87	87	87	87	87	87
Cd ch	2.5	2.6	2.5	1.9	1.1	0.7	0.9
Cu ch	14	14	13	10	5	3	4
Mn ch	2544	2607	2497	2107	1388	1032	1227
Zn ch	251	261	244	187	98	62	81

M 34							
Prediction equation coefficients							
	Hardness	Aluminum	Cadmium	Copper	Iron	Zinc	
B	0.013	1.00	0.021	0.123	0.06521	0.021	
Intercept	60.05228	15.10361	0.91724	14.65129	77.70523	05.25873	
BQ	05.02801	38.29032	0.60966	00.98354	70.29706	78.11589	
sin	9.24827	69.03843	0.26911	14.16661	89.38888	88.77920	
cos	32.30173	79.08681	0.20991	10.17487	38.04002	85.94018	
sin1		435.43127	-0.12214	1.04278	86.24646	-17.99615	
cos1		123.10453	-0.14689	-3.82920	-12.30367	-45.60154	
consent		-265.10754		-10.75402	35.80515	-98.00378	
MONTH	J	F	M	A	M	J	J
Avg monthly Q	22	22	28	58	266	468	243
Hardness	255	241	226	170	86	60	76
Chronic Stan Al, ch	87	87	87	87	87	87	87
Cd, ch	2.4	2.3	2.1	1.7	1.0	0.8	0.9
Cu ch	26	25	23	18	10	7	9

Mn	2430	2359	2275	1951	1351	1105	1257
Zn ch	234	224	211	166	94	68	84

A68 Animas at Silverton

		Prediction equation coefficients					
		Hardness	Cadmium	Copper	Manganese	Zinc	
B		0.011na	na	0.010	0.016		
Intercept		37.945	2.395	5.783	258.473	304.617	
BQ		165.600			1371.923	644.136	
sin			1.712	2.049	611.024	315.451	
cos			0.140	0.729	81.662	-18.603	
sin1			-0.250	-1.520	16.031	-33.783	
cos1			-1.185	-0.472	-263.628	-140.108	
May			-1.936	2.261	-258.699		
consent			-0.714	-1.828	411.428	-67.174	
Animas R	Month	J	F	M	A	M	J
	Q	25	25	31	66	329	585
	Hardness	168	168	161	134	74	60
	Cd, tvs	1.7	1.7	1.7	1.4	0.9	0.8
	Cu tvs	18	18	17	15	9	8
	Mn tvs	1935	1938	1895	1713	1240	1110
bnic stand	Al	87	87	87	87	87	87

ction Equation Coefficients

A	S	O	N	D
268	187	142	92	70
124	158	182	215	248
87	87	87	87	87
1.3	1.6	1.8	2.1	2.3
7	9	10	11	13
1643	1872	2022	2217	2396
127	156	176	203	229

	Acute TVS at M34		Chronic TVS at M34	
	a2	b2	a3	b3
Cd	-3.828	1.128	-3.49	0.7852
Cu	-0.7703	0.9422	-1.485	0.8545
Mn	4.4995	0.7893	4.785	0.5434
Zn	0.8904	0.8473	0.7614	0.8473

A	S	O	N	D
103	71	53	33	25
126	151	192	217	253
87	87	87	87	87
1.4	1.6	1.9	2.1	2.3
14	16	20	22	26

1659	1829	2085	2229	2418
129	150	184	205	232

Chronic TVS at A68		
	a2	b2
Cd	-3.49	0.7852
Cu	-1.485	0.8545
Mn	4.785	0.5434
Zn	0.7614	0.8473

A	S	O	N	D
122	82	60	38	28
109	125	138	155	165
1.2	1.4	1.5	1.6	1.7
12	14	15	17	18
1528	1650	1741	1854	1916
87	87	87	87	87